CLAIMS

1. A hybrid compressor provided with a compression mechanism, which has a rotary shaft, and an electric motor, which has a rotor, wherein the rotary shaft of the compression mechanism has a first end and a second end, wherein the first end of the rotary shaft is coupled to a rotating body for receiving power from an external drive source, and wherein the second end of the rotary shaft is coupled to the electric motor for receiving power from the electric motor, the hybrid compressor comprising:

a motor shaft located in the electric motor, wherein the motor shaft supports the rotor, and wherein the motor shaft is separate from the rotary shaft; and

a one-way clutch located between the second end of the rotary shaft and the motor shaft, wherein the one-way clutch couples the rotary shaft to the motor shaft, wherein the one-way clutch is capable of preventing power from being transmitted from the rotary shaft to the rotor, and wherein the one-way clutch is used as a coupling between the rotary shaft and the motor shaft.

2. The hybrid compressor according to claim 1, wherein the motor shaft has an end that includes a cylindrical inner circumferential surface, and the second end of the rotary shaft has an outer circumferential surface, wherein the inner circumferential surface of the end of the motor shaft surrounds the outer circumferential surface of the second end of the rotary shaft, and wherein the one-way clutch is located in a space between the outer circumferential surface and the inner circumferential surface.

3. The hybrid compressor according to claim 1, further comprising a housing for accommodating the compression mechanism, wherein the housing accommodates a

sealing member that seals the motor shaft and permits the one-way clutch to be located in the housing.

4. The hybrid compressor according to claim 3, wherein the compression mechanism is a piston type compression mechanism, the compression mechanism including;

a piston;

a suction chamber;

a compression chamber;

a discharge chamber;

a crank chamber;

a crank portion accommodated in the crank chamber; and

a refrigerant passage, which connects the crank chamber to the suction chamber,

wherein the crank portion converts rotation of the rotary shaft to reciprocation of the piston,

wherein the compression mechanism discharges refrigerant gas that is drawn into the compression chamber from the suction chamber and compressed in accordance with reciprocation of the piston, and

wherein the one-way clutch is located in the refrigerant passage.

5. The hybrid compressor according to claim 4, wherein the refrigerant passage includes an axial passage, which is formed along the axial direction in the rotary shaft.

6. The hybrid compressor according to claim 3, further comprising a bearing that rotatably supports the motor shaft, wherein the bearing is located inward of the sealing member in the housing.

7. The hybrid compressor according to claim 1, wherein the electric motor includes a stator and a motor housing, wherein the motor housing rotatably supports the

motor shaft and accommodates the stator and the rotor, and wherein the electric motor is formed as a unit.

8. The hybrid compressor according to claim 1, wherein the one-way clutch comprises: a plurality of recesses formed in the motor shaft about an axis of the motor shaft; a plurality of rollers, wherein each roller is accommodated in one of the recesses, and each roller is movable between an engaged position where the roller is engaged with the inner surface of the corresponding recess and the rotary shaft, and a disengaged position where the roller is apart from the engaged position; and a plurality of springs, wherein each spring urges the corresponding roller towards the engaged position, and wherein, when each roller is at the engaged position, the rotary shaft and the motor shaft are rotated in the same direction.

9. The hybrid compressor according to claim 5, further comprising a hollow restrictor, which is attached to the rotary shaft to restrict movement of the rotary shaft, wherein the restrictor is shaped like a funnel and has a small diameter portion, and wherein the small diameter portion is fitted and secured to the rotary shaft.

10. The hybrid compressor according to claim 9, wherein a space is defined between the restrictor and the rotary shaft, and wherein the space is connected to the axial passage.

11. A method for assembling a hybrid compressor, wherein a rotary shaft of a compression mechanism has a first end, which is coupled to a rotating body for receiving power from an external drive source, and a second end, which is coupled to an electric motor for receiving power from the electric motor, the method comprising:

assembling a motor shaft to which a rotor and a one-way clutch are mounted in advance to the rotary shaft along the axial direction, wherein, in the same process as assembling the motor, the motor shaft is coupled to the rotary shaft using the one-way clutch as a coupling.